

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

521,433

PCT/JP2003/009176



Applicant's or agent's file reference PC-8926	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP2003/009176	International filing date (day/month/year) 18 July 2003 (18.07.2003)	Priority date (day/month/year) 18 July 2002 (18.07.2002)
International Patent Classification (IPC) or national classification and IPC B29B 11/16, B29C 70/06, B32B 5/28 // B29K 105: 08, B29L 7: 00		
Applicant MITSUBISHI RAYON CO., LTD.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 24 December 2003 (24.12.2003)	Date of completion of this report 21 April 2004 (21.04.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed

☐ the description:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the claims:

pages _____, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the drawings:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/fig. _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-36	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-36	NO
Industrial applicability (IA)	Claims	1-36	YES
	Claims		NO

2. Citations and explanations

Document 1: JP 01-200914 A (Mitsubishi Rayon Co., Ltd.),
14 August 1989

Document 2: WO 98/34979 A1 (Cytec Technology Corp.), 13
August 1998

Document 3: WO 00/27632 A1 (Structural Polymer Systems
Ltd.), 18 May 2000

Document 4: JP 56-115216 A (Hitachi Chemical Co., Ltd.),
10 September 1981

Document 5: JP 60-038134 A (Daiwa Seiko Inc.), 27
February 1985

Document 6: JP 60-060136 A (Daiwa Seiko Inc.), 6 April
1985

Claims 1, 2, and 4 to 15 do not involve an inventive step in the light of documents 2 and 3 and documents 4 to 6 cited in the international search report. Documents 2 and 3 disclose a prepreg wherein a fiber layer is partially impregnated with a matrix resin, and document 3 also discloses a constitution wherein both sides of a fiber layer are partially impregnated with a resin. Further, a method wherein a matrix resin applied to a resin carrier sheet is laminated with a fiber base material is disclosed as a matrix resin impregnation

method. Here, documents 4 to 6 disclose a reinforced prepreg constitution wherein a heat-curing resin containing inorganic short fibers or polymer short fibers is applied to a long fiber base material, thereby forming a short fiber layer on a prepreg surface, and thus, a person skilled in the art could easily conceive of combining the constitution wherein a short fiber layer is formed, disclosed in documents 4 to 6, with the prepreg disclosed in documents 2 and 3 to constitute the inventions described in claims 1, 2, and 4 to 15.

Claims 3 and 16 do not involve an inventive step in the light of document 1 cited in the international search report. Document 1 discloses a prepreg wherein a press roll having an uneven pattern is used to impregnate a fiber base material with a resin layer, thereby forming a portion of the surface of the prepreg that is not impregnated with resin and is air-permeable. A resin coverage ratio is merely a feature fittingly optimized at the discretion of a person skilled in the art.

Claim 17 does not involve an inventive step in the light of document 1 and documents 4 to 6 cited in the international search report. A person skilled in the art could easily conceive of combining the constitution wherein a short fiber layer is formed, disclosed in documents 4 to 6, with the prepreg disclosed in document 1 to constitute the invention described in claim 17.

Claim 18 does not involve an inventive step in the light of documents 1 to 3 and 4 to 6 cited in the international search report. As disclosed in documents 1 to 3, laminating and curing a prepreg is conventional practice in this technical field, and thus, decisions pertaining to materials to combine or curing conditions

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are merely features fittingly determined at the discretion
of a person skilled in the art.

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The definition of interstitial occupancy rate is unclear. There is no direct relationship between the number of resin islands and the number of interstices in the weave of a fabric, and thus, this index of an interstitial occupancy rate is not considered to have any significance. If it is the ratio of the number of interstices covered by resin islands to the total number of interstices in the overall fabric, it can be understood as an index of the degree to which the surface is coated, but it is unclear as to what technical significance the interstitial occupancy rate defined in the description has, and what conclusions might be drawn therefrom.